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Taxonomic Paper

Terrestrial gastropods of Srebarna Nature Reserve, North-Eastern Bulgaria (Gastropoda)

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Abstract

We give the results from the first investigation focused on the land snail fauna in Srebarna Nature Reserve in Bulgaria. A total of 23 localities were studied and 27 species of terrestrial gastropods were found, 23 of which were new observations for the Reserve.

Keywords

Bulgaria, Srebarna Nature Reserve, terrestrial gastropods, fauna

Introduction

Srebarna Lake was declared as a protected site in 1942 and as a Nature Reserve in 1948. In 1998, according to the national nature protection legislation, it was classified as a "Managed Reserve". In 1975, Srebarna Lake was also protected as a Wetland of International Importance under the Ramsar Convention and, in 1977, as a UNESCO Biosphere Reserve. In 1983, it was listed as World Natural and Cultural Heritage Site by UNESCO, and in 1989 the Lake was designated as European Important Bird Area (BG 033) by BirdLife International. Srebarna Lake was also included in Natura 2000 network in 2009 (http://www.ecolab.bas.bg, http://whc.unesco.org).

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Srebarna is a hyper-euthrophic lake, located on the Bulgarian (right) bank of the Danube River between R.km 391 and R.km 393; UTM grid NJ 08. The Nature Reserve has a total surface area of 902.1 ha (Vasilev et al. 2012).

Until the recent study, no previous focused investigations had been carried out on terrestrial snails in the Reserve. Prokopich et al. (1970) reported the first land snails that functioned as intermediate hosts in their studies on cestodes: *Cepaea vindobonensis*, *Helix lucorum*, *Monacha cartusiana* and *Succinea putris*. Dedov (1998) found a total of seven species of land snails, adding three species to the previous observations: *Fruticicola fruticum*, *Chondrula tridens* and *Xerolenta obvia* (as *Helicella candicans* L. Pfeiffer, 1841).

Materials and methods

In total, 23 localities were studied (Table 1). The terrestrial gastropods were collected by hand and soil samples were taken by I. Dedov (12 – 14.VI.2014) and V. Antonova (19 – 20.VII.2014). The material was stored in 70% ethanol or as dry shells. The species determination was done according to Damyanov and Likharev (1975) and Welter-Schultes (2012). The material is stored in the collection of I. Dedov in the Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences (IBER - BAS).

Table 1.

Studied localities in Srebarna Nature Reserve.

№	Coordinates	Locality	Date	Species
1	44.0949 27.0639	village Srebarna, on stone fence	12-13.06.2014	*Chondrula tridens*
2	44.0992 27.0648	village Srebarna, yard of IBER house	12-15.06.2014	*Cepaea vindobonensis*, *Deroceras* cf. *reticulatum*, *Helix pomatia*, *Limacus flavus*, *Monacha carascaloides*, *Tandonia* cf. *kusceri*, *Xerolenta obvia*
3	44.09339 27.06393	village Srebarna, meadows near roads in the village	12-15.06.2014	*Cepaea vindobonensis*, *Helix pomatia*, *Monacha carascaloides*, *Xerolenta obvia*
4	44.10314 27.06285	Srebarna Reserve, buffer zone, meadows and bushes	13.06.2014	*Helix pomatia*, *Monacha carascaloides*, *Xerolenta obvia*
5	44.10302 27.06354	Srebarna Reserve, buffer zone, meadow near lake	13.06.2014	*Cepaea vindobonensis*, *Helix pomatia*, *Monacha carascaloides*
6	44.10738 27.05965	Srebarna Reserve, buffer zone, meadow and bushes	13.06.2014	*Cepaea vindobonensis*, *Helix pomatia*, *Monacha carascaloides*

7	44.10758 27.05853	Srebarna Reserve, buffer zone, meadow and bushes	13.06.2014	*Cepaea vindobonensis*
8	44.11252 27.05658	Srebarna Reserve, buffer zone, meadow and bushes	13.06.2014	*Helix pomatia*, *Monacha carascaloides*
9	44.12067 27.06315	Srebarna Reserve, buffer zone, meadow	13.06.2014	*Zebrina detrita*
10	44.13043 27.06131	Srebarna Reserve, buffer zone, open terrain near Danube	13.06.2014	*Cepaea vindobonensis*, *Helix pomatia*
11	44.12875 27.06027	Srebarna Reserve, buffer zone, forest	13.06.2014	*Acanthinula aculeata*, *Cecilioides acicula*, *Cepaea vindobonensis*, *Chondrula microtragus*, *Helix pomatia*, *Laciniaria plicata*, *Lindholmiola girva*, *Monacha carascaloides*, *Oxyloma* cf. *elegans*, *Pomatias elegans*, *Punctum pygmaeum*, *Trochulus hispidus*, *Truncatellina cylindrica*, *Truncatellina rothi*, *Vallonia costata*, *Vallonia enniensis*, *Vallonia excentrica*, *Vallonia pulchella*, *Xerolenta obvia*, *Zebrina detrita*
12	44.08833 27.06701	Srebarna Reserve, buffer zone, meadow and bushes	14.06.2014	*Cepaea vindobonensis*, *Helix pomatia*, *Monacha carascaloides*, *Xerolenta obvia*
13	44.08865 27.06411	Srebarna Reserve, buffer zone, meadow and bushes	14.06.2014	*Cepaea vindobonensis*, *Helix pomatia*, *Monacha carascaloides*, *Xerolenta obvia*
14	44.08939 27.07399	Srebarna Reserve, buffer zone, meadow and bushes	14.06.2014	*Cepaea vindobonensis*, *Helix pomatia*, *Monacha carascaloides*, *Xerolenta obvia*
15	44.08937 27.06819	Srebarna Reserve, buffer zone, forest	14.06.2014	*Chondrula tridens*, *Tandonia* cf. *kusceri*, *Truncatellina cylindrica*, *Vallonia costata*, *Vallonia* cf. *excentrica*, *Vallonia pulchella*
16	44.08802 27.06490	Srebarna Reserve, buffer zone, cane near the water, single acacias	19.07.2014	*Monachoides incarnatus*, *Oxyloma* cf. *elegans*, *Tandonia* cf. *kusceri*
17	44.09689 27.09480	Srebarna Reserve, buffer zone, shrubs near road, deciduous forest ecotone	19.07.2014	*Pomatias elegans*

18	44.09999 27.09350	Srebarna Reserve, buffer zone, open terrain near gazebo	19.07.2014	*Chondrula microtragus*
19	44.10249 27.09153	Srebarna Reserve, buffer zone, acacias' forest	19.07.2014	*Aegopinella minor*, *Lindholmiola girva*, *Oxychilus* sp. (only juvenile specimens)
20	44.10766 27.08478	Srebarna Reserve, buffer zone, coniferous forest (Pinus nigra)	19.07.2014	*Aegopinella minor*
21	44.11780 27.0797	Srebarna Reserve, buffer zone, shrubs	19.07.2014	*Zebrina detrita*
22	44.13167 27.08780	Srebarna Reserve, buffer zone, bank of the Danube river, northern Gateway	19.07.2014	*Oxyloma* cf. *elegans*
23	44.09623 27.07008	Srebarna Reserve, buffer zone, grasses near lake shore (near the village)	20.07.2014	*Chondrula tridens*

Checklist of terrestrial gastropods

Acanthinula aculeata (O.F. Muller 1774)

Material

a. scientificName: *Acanthinula aculeata* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Valloniidae; genus: *Acanthinula*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

Aegopinella minor (Stabile 1864)

Materials

a. scientificName: *Aegopinella minor* (Stabile 1864); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Oxychilidae; genus: *Aegopinella*; scientificNameAuthorship: (Stabile 1864); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 19;

decimalLatitude: 44.10249; decimalLongitude: 27.09153; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1628

b. scientificName: *Aegopinella minor* (Stabile 1864); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Oxychilidae; genus: *Aegopinella*; scientificNameAuthorship: (Stabile 1864); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 20; decimalLatitude: 44.10766; decimalLongitude: 27.08478; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: Coniferous forest (Pinus nigra); sex: hermaphrodite; lifeStage: adult; identificationID: BG1629

Cecilioides acicula (O.F. Muller 1774)

Material

a. scientificName: *Cecilioides acicula* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Ferussaciidae; genus: *Cecilioides*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

Cepaea vindobonensis (C. Pfeiffer 1828)

Materials

a. scientificName: *Cepaea vindobonensis* (C. Pfeiffer 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Cepaea*; scientificNameAuthorship: (C. Pfeiffer 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 2; decimalLatitude: 44.0992; decimalLongitude: 27.0648; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Yards and hedges; sex: hermaphrodite; lifeStage: adult; identificationID: BG1611

b. scientificName: *Cepaea vindobonensis* (C. Pfeiffer 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Cepaea*; scientificNameAuthorship: (C. Pfeiffer 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 3; decimalLatitude: 44.09339; decimalLongitude: 27.06393; georeferencedBy: Garmin 60 CS; eventDate: 06-15-14; habitat: meadows near roads in the village; sex: hermaphrodite; lifeStage: adult; identificationID: BG1612

c. scientificName: *Cepaea vindobonensis* (C. Pfeiffer 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Cepaea*; scientificNameAuthorship: (C. Pfeiffer 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 5; decimalLatitude: 44.10302; decimalLongitude: 27.06354; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadow near Srebarna lake; sex: hermaphrodite; lifeStage: adult; identificationID: BG1614

d. scientificName: *Cepaea vindobonensis* (C. Pfeiffer 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Cepaea*; scientificNameAuthorship: (C. Pfeiffer 1828); continent: Europe; country: Bulgaria;

municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 6; decimalLatitude: 44.10738; decimalLongitude: 27.05965; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1615

e. scientificName: *Cepaea vindobonensis* (C. Pfeiffer 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Cepaea*; scientificNameAuthorship: (C. Pfeiffer 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 7; decimalLatitude: 44.10758; decimalLongitude: 27.05853; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1616

f. scientificName: *Cepaea vindobonensis* (C. Pfeiffer 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Cepaea*; scientificNameAuthorship: (C. Pfeiffer 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 10; decimalLatitude: 44.13043; decimalLongitude: 27.06131; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: open areas near Danube revier; sex: hermaphrodite; lifeStage: adult; identificationID: BG1619

g. scientificName: *Cepaea vindobonensis* (C. Pfeiffer 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Cepaea*; scientificNameAuthorship: (C. Pfeiffer 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

h. scientificName: *Cepaea vindobonensis* (C. Pfeiffer 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Cepaea*; scientificNameAuthorship: (C. Pfeiffer 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 12; decimalLatitude: 44.08833; decimalLongitude: 27.06701; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1621

i. scientificName: *Cepaea vindobonensis* (C. Pfeiffer 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Cepaea*; scientificNameAuthorship: (C. Pfeiffer 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 13; decimalLatitude: 44.08865; decimalLongitude: 27.06411; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1622

j. scientificName: *Cepaea vindobonensis* (C. Pfeiffer 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Cepaea*; scientificNameAuthorship: (C. Pfeiffer 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 14; decimalLatitude: 44.08939; decimalLongitude: 27.07399; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1623

Conservation status: IUCN: LC

Chondrula microtragus (Rossmassler 1839)

Materials

a. scientificName: *Chondrula microtragus* (Rossmassler 1839); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Enidae; genus: *Chondrula*; scientificNameAuthorship: (Rossmassler 1839); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Meadows and open areas; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

b. scientificName: *Chondrula microtragus* (Rossmassler 1839); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Enidae; genus: *Chondrula*; scientificNameAuthorship: (Rossmassler 1839); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 18; decimalLatitude: 44.09999; decimalLongitude: 27.09350; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: Meadows and open areas; sex: hermaphrodite; lifeStage: adult; identificationID: BG1627

Conservation status: IUCN: LC

Chondrula tridens (O.F. Muller 1774)

Materials

a. scientificName: *Chondrula tridens* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Enidae; genus: *Chondrula*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 1; decimalLatitude: 44.0949; decimalLongitude: 27.0639; georeferencedBy: Garmin 60 CS; eventDate: 06-12-14; habitat: Yards and hedges, stone fence; sex: hermaphrodite; lifeStage: adult; identificationID: BG1610

b. scientificName: *Chondrula tridens* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Enidae; genus: *Chondrula*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 15; decimalLatitude: 44.08937; decimalLongitude: 27.06819; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1624

c. scientificName: *Chondrula tridens* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Enidae; genus: *Chondrula*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 23; decimalLatitude: 44.09623; decimalLongitude: 27.07008; georeferencedBy: Garmin 60 CS; eventDate: 07-20-14; habitat: meadows and open areas; sex: hermaphrodite; lifeStage: adult; identificationID: BG1632

Deroceras reticulatum (O.F. Muller 1774)

Material

a. scientificName: *Deroceras* af. *reticulatum* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Agriolimacidae; genus: *Deroceras* ; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 2; decimalLatitude: 44.0992; decimalLongitude: 27.0648; georeferencedBy: Garmin 60 CS; eventDate: 06-12-14; habitat: Yards and hedges; sex: hermaphrodite; lifeStage: adult; identificationID: BG1611

Helix pomatia Linnaeus 1758

Materials

a. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 2; decimalLatitude: 44.0992; decimalLongitude: 27.0648; georeferencedBy: Garmin 60 CS; eventDate: 06-12-14; habitat: Meadows and open areas,; sex: hermaphrodite; lifeStage: adult; identificationID: BG1611

b. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 3; decimalLatitude: 44.09339; decimalLongitude: 27.06393; georeferencedBy: Garmin 60 CS; eventDate: 06-12-14; habitat: meadows near roads in the village; sex: hermaphrodite; lifeStage: adult; identificationID: BG1612

c. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 4; decimalLatitude: 44.10314; decimalLongitude: 27.06285; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1613

d. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 5; decimalLatitude: 44.10302; decimalLongitude: 27.06354; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadow near lake; sex: hermaphrodite; lifeStage: adult; identificationID: BG1614

e. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 6; decimalLatitude: 44.10738; decimalLongitude: 27.05965; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1615

f. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 8; decimalLatitude: 44.11252; decimalLongitude: 27.05658; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1617

g. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 10; decimalLatitude: 44.13043; decimalLongitude: 27.06131; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Meadows and open areas,; sex: hermaphrodite; lifeStage: adult; identificationID: BG1619

h. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

i. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 12; decimalLatitude: 44.08833; decimalLongitude: 27.06701; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1621

j. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 13; decimalLatitude: 44.08865; decimalLongitude: 27.06411; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1622

k. scientificName: *Helix pomatia* Linnaeus 1748; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicidae; genus: *Helix*; scientificNameAuthorship: Linnaeus 1758; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 14; decimalLatitude: 44.08939; decimalLongitude: 27.07399; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1623

Conservation status: IUCN: LC, BSG, ZBR-41

Laciniaria plicata (Draparnaud 1801)

Material

a. scientificName: *Laciniaria plicata* (Draparnaud 1801); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Clausiliidae; genus: *Laciniaria*; scientificNameAuthorship: (Draparnaud 1801); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

Limacus flavus (Linnaeus 1758)

Material

a. scientificName: *Limacus flavus* (Linnaeus 1758); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Limacidae; genus: *Limacus*; scientificNameAuthorship: (Linnaeus 1758); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 2; decimalLatitude: 44.0992; decimalLongitude: 27.0648; georeferencedBy: Garmin 60 CS; eventDate: 06-12-14; habitat: Yards and hedges; sex: hermaphrodite; lifeStage: adult; identificationID: BG1611

Lindholmiola girva (Frivaldsky 1835)

Materials

a. scientificName: *Lindholmiola girva* (Frivaldsky 1835); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicodontidae; genus: *Lindholmiola*; scientificNameAuthorship: (Frivaldsky 1835); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

b. scientificName: *Lindholmiola girva* (Frivaldsky 1835); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Helicodontidae; genus: *Lindholmiola*; scientificNameAuthorship: (Frivaldsky 1835); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 19; decimalLatitude: 44.10249; decimalLongitude: 27.09153; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1628

Conservation status: IUCN: LC

Monacha carascaloides (Bourguignat 1855)

Materials

a. scientificName: *Monacha carascaloides* (Bourguignat 1855); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monacha*; scientificNameAuthorship: (Bourguignat 1855); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 2; decimalLatitude: 44.0992; decimalLongitude: 27.0648; georeferencedBy: Garmin 60 CS; eventDate: 06-12-14; habitat: Meadows and open areas,; sex: hermaphrodite; lifeStage: adult; identificationID: BG1611

b. scientificName: *Monacha carascaloides* (Bourguignat 1855); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monacha*; scientificNameAuthorship: (Bourguignat 1855); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 3; decimalLatitude: 44.09339; decimalLongitude: 27.06393; georeferencedBy: Garmin 60 CS; eventDate: 06-12-14; habitat: meadows near roads in the village; sex: hermaphrodite; lifeStage: adult; identificationID: BG1612

c. scientificName: *Monacha carascaloides* (Bourguignat 1855); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monacha*; scientificNameAuthorship: (Bourguignat 1855); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 4; decimalLatitude: 44.10314; decimalLongitude: 27.06285; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1613

d. scientificName: *Monacha carascaloides* (Bourguignat 1855); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monacha*; scientificNameAuthorship: (Bourguignat 1855); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 5; decimalLatitude: 44.10302; decimalLongitude: 27.06354; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadow near lake; sex: hermaphrodite; lifeStage: adult; identificationID: BG1614

e. scientificName: *Monacha carascaloides* (Bourguignat 1855); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monacha*; scientificNameAuthorship: (Bourguignat 1855); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 6; decimalLatitude: 44.10738; decimalLongitude: 27.05965; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1615

f. scientificName: *Monacha carascaloides* (Bourguignat 1855); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monacha*; scientificNameAuthorship: (Bourguignat 1855); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 8; decimalLatitude: 44.11252; decimalLongitude: 27.05658; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1617

g. scientificName: *Monacha carascaloides* (Bourguignat 1855); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monacha*; scientificNameAuthorship: (Bourguignat 1855); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60

CS; eventDate: 06-13-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

h. scientificName: *Monacha carascaloides* (Bourguignat 1855); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monacha*; scientificNameAuthorship: (Bourguignat 1855); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 12; decimalLatitude: 44.08833; decimalLongitude: 27.06701; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1621

i. scientificName: *Monacha carascaloides* (Bourguignat 1855); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monacha*; scientificNameAuthorship: (Bourguignat 1855); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 13; decimalLatitude: 44.08865; decimalLongitude: 27.06411; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1622

j. scientificName: *Monacha carascaloides* (Bourguignat 1855); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monacha*; scientificNameAuthorship: (Bourguignat 1855); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 14; decimalLatitude: 44.08939; decimalLongitude: 27.07399; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1623

Conservation status: IUCN: LC

Monachoides incarnates (O.F. Muller 1774)

Material

a. scientificName: *Monachoides incarnates* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Monachoides*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 16; decimalLatitude: 44.08802; decimalLongitude: 27.06490; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: (Reed with single Acacia sp. trees); sex: hermaphrodite; lifeStage: adult; identificationID: BG1625

Conservation status: IUCN: LC

Oxychilus sp.

Material

a. scientificName: *Oxychilus* sp.; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Oxychilidae; genus: *Oxychilus*; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 19; decimalLatitude: 44.10249; decimalLongitude: 27.09153; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: juvenile; identificationID: BG1628

Oxyloma elegans (Risso 1826)

Materials

a. scientificName: *Oxyloma* cf. *elegans* (Risso 1826); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Succineidae; genus: *Oxyloma*; scientificNameAuthorship: (Risso 1826); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

b. scientificName: *Oxyloma* cf. *elegans* (Risso 1826); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Succineidae; genus: *Oxyloma*; scientificNameAuthorship: (Risso 1826); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 16; decimalLatitude: 44.08802; decimalLongitude: 27.06490; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: Reed with single Acacia sp. trees; sex: hermaphrodite; lifeStage: adult; identificationID: BG1625

c. scientificName: *Oxyloma* cf. *elegans* (Risso 1826); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Succineidae; genus: *Oxyloma*; scientificNameAuthorship: (Risso 1826); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 22; decimalLatitude: 44.13167; decimalLongitude: 27.08780; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: Danube river's bank; sex: hermaphrodite; lifeStage: adult; identificationID: BG1631

Pomatias elegans (O.F. Muller 1774)

Materials

a. scientificName: *Pomatias elegans* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Neotaenioglossa; family: Pomatiidae; genus: *Pomatias*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Deciduous forest; lifeStage: adult; identificationID: BG1620

b. scientificName: *Pomatias elegans* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Neotaenioglossa; family: Pomatiidae; genus: *Pomatias*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 17; decimalLatitude: 44.09689; decimalLongitude: 27.09480; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: Bushes in the ecotone of deciduous forest; lifeStage: adult; identificationID: BG1626

Punctum pygmaeum (Draparnaud 1801)

Material

a. scientificName: *Punctum pygmaeum* (Draparnaud 1801); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Punctidae; genus: *Punctum*; scientificNameAuthorship: (Draparnaud 1801); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

Tandonia kusceri (H. Wagner 1931)

Materials

a. scientificName: *Tandonia* af. *kusceri* (H. Wagner 1931); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Milacidae; genus: *Tandonia*; scientificNameAuthorship: (H. Wagner 1931); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 2; decimalLatitude: 44.0992; decimalLongitude: 27.0648; georeferencedBy: Garmin 60 CS; eventDate: 06-12-14; habitat: Yards and hedges; sex: hermaphrodite; lifeStage: adult; identificationID: BG1611

b. scientificName: *Tandonia* af. *kusceri* (H. Wagner 1931); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Milacidae; genus: *Tandonia*; scientificNameAuthorship: (H. Wagner 1931); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 15; decimalLatitude: 44.08937; decimalLongitude: 27.06819; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1624

c. scientificName: *Tandonia* af. *kusceri* (H. Wagner 1931); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Milacidae; genus: *Tandonia*; scientificNameAuthorship: (H. Wagner 1931); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 16; decimalLatitude: 44.08802; decimalLongitude: 27.06490; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: Reed with single Acacia sp. trees; sex: hermaphrodite; lifeStage: adult; identificationID: BG1625

Trochulus hispidus (Linnaeus 1758)

Material

a. scientificName: *Trochulus hispidus* (Linnaeus 1758); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Trochulus*; scientificNameAuthorship: (Linnaeus 1758); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

Conservation status: IUCN: LC

Truncatellina cylindrica (A. Ferussac 1807)

Materials

a. scientificName: *Truncatellina cylindrica* (A. Ferussac 1807); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Vertiginidae; genus: *Truncatellina*; scientificNameAuthorship: (A. Ferussac 1807); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

b. scientificName: *Truncatellina cylindrica* (A. Ferussac 1807); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Vertiginidae; genus: *Truncatellina*; scientificNameAuthorship: (A. Ferussac 1807); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 15; decimalLatitude: 44.08937; decimalLongitude: 27.06819; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1624

Truncatellina rothi (Reinhardt 1916)

Material

a. scientificName: *Truncatellina rothi* (Reinhardt 1916); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Vertiginidae; genus: *Truncatellina*; scientificNameAuthorship: (Reinhardt 1916); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: Deciduous forest; sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

Conservation status: IUCN: LC

Vallonia costata (O.F. Muller 1774)

Materials

a. scientificName: *Vallonia costata* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Valloniidae; genus: *Vallonia*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

b. scientificName: *Vallonia costata* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Valloniidae; genus: *Vallonia*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 15; decimalLatitude: 44.08937; decimalLongitude: 27.06819; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1624

Vallonia enniensis (Gredler 1856)

Material

a. scientificName: *Vallonia enniensis* (Gredler 1856); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Valloniidae; genus: *Vallonia*; scientificNameAuthorship: (Gredler 1856); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

Conservation status: IUCN: DD

Vallonia excentrica Sterki 1893

Materials

a. scientificName: *Vallonia excentrica* Sterki 1893; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Valloniidae; genus: *Vallonia*; scientificNameAuthorship: Sterki 1893; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

b. scientificName: *Vallonia excentrica* Sterki 1893; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Valloniidae; genus: *Vallonia*; scientificNameAuthorship: Sterki 1893; continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 15; decimalLatitude: 44.08937; decimalLongitude: 27.06819; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1624

Vallonia pulchella (O.F. Muller 1774)

Materials

a. scientificName: *Vallonia pulchella* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Valloniidae; genus: *Vallonia*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

b. scientificName: *Vallonia pulchella* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Valloniidae; genus: *Vallonia*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 15; decimalLatitude: 44.08937; decimalLongitude: 27.06819; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1624

Xerolenta obvia (Menke 1828)

Materials

a. scientificName: *Xerolenta obvia* (Menke 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Xerolenta*; scientificNameAuthorship: (Menke 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 2; decimalLatitude: 44.0992; decimalLongitude: 27.0648; georeferencedBy: Garmin 60 CS; eventDate: 06-12-14; habitat: Meadows and open areas,; sex: hermaphrodite; lifeStage: adult; identificationID: BG1611

b. scientificName: *Xerolenta obvia* (Menke 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Xerolenta*; scientificNameAuthorship: (Menke 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 3; decimalLatitude: 44.09339; decimalLongitude: 27.06393; georeferencedBy: Garmin 60 CS; eventDate: 06-12-14; habitat: meadows near roads in the village; sex: hermaphrodite; lifeStage: adult; identificationID: BG1612

c. scientificName: *Xerolenta obvia* (Menke 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Xerolenta*; scientificNameAuthorship: (Menke 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 4; decimalLatitude: 44.10314; decimalLongitude: 27.06285; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1613

d. scientificName: *Xerolenta obvia* (Menke 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Xerolenta*; scientificNameAuthorship: (Menke 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

e. scientificName: *Xerolenta obvia* (Menke 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Xerolenta*; scientificNameAuthorship: (Menke 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 12; decimalLatitude: 44.08833; decimalLongitude: 27.06701; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1621

f. scientificName: *Xerolenta obvia* (Menke 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Xerolenta*; scientificNameAuthorship: (Menke 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 13; decimalLatitude: 44.08865; decimalLongitude: 27.06411; georeferencedBy: Garmin 60 CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1622

g. scientificName: *Xerolenta obvia* (Menke 1828); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Hygromiidae; genus: *Xerolenta*; scientificNameAuthorship: (Menke 1828); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 14; decimalLatitude: 44.08939; decimalLongitude: 27.07399; georeferencedBy: Garmin 60

CS; eventDate: 06-14-14; habitat: meadows and bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1623

Zebrina detrita (O.F. Muller 1774)

Materials

a. scientificName: *Zebrina detrita* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Enidae; genus: *Zebrina*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 9; decimalLatitude: 44.12067; decimalLongitude: 27.06315; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: meadows and open areas; sex: hermaphrodite; lifeStage: adult; identificationID: BG1618

b. scientificName: *Zebrina detrita* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Enidae; genus: *Zebrina*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 11; decimalLatitude: 44.12875; decimalLongitude: 27.06027; georeferencedBy: Garmin 60 CS; eventDate: 06-13-14; habitat: (Deciduous forest); sex: hermaphrodite; lifeStage: adult; identificationID: BG1620

c. scientificName: *Zebrina detrita* (O.F. Muller 1774); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Pulmonata; family: Enidae; genus: *Zebrina*; scientificNameAuthorship: (O.F. Muller 1774); continent: Europe; country: Bulgaria; municipality: Silistra; locality: Srebarna Nature Reserve; locationRemarks: 21; decimalLatitude: 44.11780; decimalLongitude: 27.0797; georeferencedBy: Garmin 60 CS; eventDate: 07-19-14; habitat: Bushes; sex: hermaphrodite; lifeStage: adult; identificationID: BG1630

Discussion

During the recent research in the Srebarna protected area, 27 land snails species were found: 23 of them were new species records for the reserve and four had been documented in the area previously. *F. fruticum* (reported by Dedov 1998) and *H. lucorum* (published by Prokopich et al. 1970) were not found. Anatomical and conchological investigation of specimens identified as *Monacha*, and which fit the description of *M. cartusiana* of Prokopich et al. (1970), showed the specimens to be *M. carascaloides* (Fig. 1).

The species *Oxyloma* cf. *elegans* needs further confirmation by anatomical characteristics. During the field work, adult specimens were found only as empty shells. According to the key of Damyanov and Likharev (1975), the height of the mature shells (about 22.5 мм) corresponds to *S. putris* (see Dedov 1998), but the body color of the single juvenile specimen found alive is dark-patched pigmented as in the genus *Oxyloma* (Welter-Schultes 2012). Most probably both *Oxyloma* cf. *elegans* and *S. putris* occur in the reserve.

The species found in most localities were *Helix pomatia* (11 sites, Fig. 1), *C. vindobonensis* (10 sites), *M. carascaloides* (10 sites) and *X. obvia* (7 sites). The recorded species belong

to 15 families, the most species rich of which are Valloniidae (5 species), Hygromiidae (4) and Enidae (3).

Figure 1.

Above: *Helix pomatia* Linnaeus 1758 (diameter of shell 41 mm); below: *Monacha carascaloides* (Bourguignat 1855) (diameter of shell 16 mm), Sreburna reserve, buffer zone, meadow and bushes.

Of all the species recorded, eight have been evaluated in the "IUCN red list of threatened species 2014" to belong to the category LC (Least Concern): *C. vindobonensis*, *Ch. microtragus*, *H. pomatia*, *L. girva*, *M. incarnatus*, *M. carascaloides*, *T. hispidus*, *T. rothi* and one - (*V. enniensis*) - in the category DD (Data Deficient). Another two species (*H. lucorum* and *H. pomatia*) are mentioned in the Bulgarian conservation legislation, as they are included in Section III (Regulated use of plant and animal species), Art. 41 (1), Annex 4 of "Biodiversity Act" (State Gazette 2002).

The deciduous forests in the buffer zone of Srebarna Reserve were found to be richer in gastropod species than the reserve itself (a total of 24 species, 13 of which were found only in this habitat). These were meso-xerophyle and xerophyle species which live in the forest ecotone (*C. vindobonensis*, *Ch. microtragus*, *Ch. tridens*, *M. carascaloides*, *V. costata*, *V. excentrica*, *V. pulchella*, *X. obvia*, *Z. detrita*) or meso-hygrophyle and hygrophyle species, occasionally found into the samples (*V. enniensis*, Succineidae). Eight species of conservation significance were found in the deciduous forests (*C. vindobonensis, Ch. microtragus*, *H. pomatia*, *L. girva*, *M. carascaloides*, *M. incarnatus*, *Tr. hispidus* and *Tr. rothi*).

In the open and urban areas, nine species were found and two of them were of conservation significance (*C. vindobonensis* and *H. pomatia*). The slug *D.* cf. *reticulatum* was found only in open habitats.

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